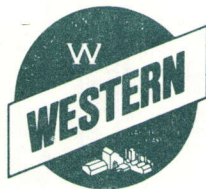


Producers & Processors Of
Fullers Earth
Bentonite
Rock Dust
Custom Milling
Western Sea Coal



clay company

P. O. Box 1067
Aurora, Utah 84620

Office: (801) 529-3281
Plant: (801) 529-3445

JIM

JAN 19 1983

RECEIVED
JAN 19 1983

DIVISION OF
OIL, GAS & MINING

State of Utah
Natural Resources & Energy
Oil, Gas & Mining
4241 State Office Bldg
Salt Lake City, UT 84114

Attn: Mr. James W. Smith Jr.
Coordinator of Mined Land Development

January 13, 1983

Dear Mr. Smith,

Regarding your letter dated 12-08-82, outlining deficiencies in our initial M.R.P. submission, I certainly hope the following clarifications will resolve the problems.

Rule M-3 (1)(A)-(C)-(E)

(A) The number of acres involved in the mine plan will total 28.7 acres of lands actually disturbed by the mining process. Of this total, 23 acres are owned by the State of Utah with the remaining 5.7 acres belonging to Mr. Terrel Nelson. Approximately .61 additional acres of roadways will be involved. See attached map #1.

(C) All maps previously submitted are scale 1"=500'.

(E) Map P.3.D. was inadvertently omitted for the initial submittal. See attached map #1.

Rule M-3 (1)(D)

After a visit to the area by Mr. Tom Portle, it has been determined that this question was adequately addressed in the initial plan.

Rule M-3 and M-6

Upon a visual inspection of the affected area it was decided that maps 8 A&B will satisfy this question with the addition of attached map #2.

Surety Estimate - Bonding

As was stated in the original submittal, contemporaneous reclamation will begin as soon as pit development reaches the point that sufficient working room for regrading and etc. is available. Present plans call for an initial area approximately 100' x 150' to be regraded and recovered with various depths of available topsoil and planted in the fall of 1983. This area will serve as a test plot as well as be the initial phase of reclamation.

Since our plan is to conduct contemporaneous reclamation as pit development progresses, the following overburden and reject mine material placement costs can be figured as a one time cost. This is due to the fact that in the early stages of pit development, reject material had to be hauled outside the pit to allow sufficient working room. As the pit is developed, sufficient working room will be available and reject material, mainly oversize rock, can be placed in its final resting place concurrent with normal mining operation.

Using the caterpillar performance handbook, the following reject material replacement and grading costs were developed.

Machine operating cost \$100/hr including labor
 Load - haul - dump - return cycle time 1.5 min/cycle
 Haul 5 yd³ per cycle.
 $60 \text{ min/hr} \div 1.5 \text{ min/cycle} = 40 \text{ cycles/hr} \times 5 \text{ yd}^3/\text{cycle} =$
 $200 \text{ yd}^3/\text{hr} \quad \$100/\text{hr} \div 200 \text{ yd}^3/\text{hr} = \$.50/\text{yd}^3$

Reject material to be replaced = $5500 \text{ yd}^3 \times \$.50/\text{yd}^3 = \$2750$

An area of approximately 7 acres is presently disturbed and this is the maximum area which is anticipated to be disturbed and unreclaimed at any time. Actually, as mining progresses, the disturbed and unreclaimed area should diminish to some extent.

Topsoil redistribution and stabilization costs, using the same method as for reject material replacement and grading are estimated at \$.40/yd³. The lesser cost is due to a more favorable haulage profile and easier handling. Topsoil stockpiles presently total approximately 6,000 yd³, $(6,000 \text{ yd}^3 \times \$.40/\text{yd}^3 = \$2400)$.

During an onsite visit by soil conservation service personnel it was recommended that, due to the nature of the available topsoil, a broadcast seeding and imprint method of reseeding be used. Two alternate seed mixtures were recommended, see attached page #3. The cost figures presented reflect the lower cost seed mixture.

Acreage to be reseeded $28.7 \times \$136.70$ seed cost/acre = \$3923.29. It is felt the the \$2,000 for reseeding and labor previously submitted will be adequate for reseeding.

Since contemporaneous reclamation will be conducted. The revegetation success will be more or less continuously monitored, a formal transect will be conducted annually in late June or early July to ascertain regrowth success.

Rule M-3 (2)(A)(B)

According to local soil conservation service personnel, about the only wildlife the area is suitable for is rabbits and lizards. See attached page #4.

Rule M-3 (2)(E)

The attached seed mix and application rates are given in pure live seed/acre. Seedbed preparation will consist of discing the area to be reseeded. Seeding will be accomplished by broadcast and imprinting.

Rule M-10 (12) (2)

See attachment #4. Monitoring has been previously addressed. Fund for monitoring should not exceed the \$500 mentioned in the initial submittal.

Contemporaneous reclamation will be conducted and if after some years of experience prove that the revegetation success standard is unattainable, a variance based on actual experience will be applied for.

Rule M-10 (14)

See attached map #5

Soil Protection

Due to the nature of the topsoil material, minimum erosion protection is necessary. The stockpiles will be leveled on top to provide for better moisture retention. The drainage for runoff moisture which will affect stockpile is extremely small so no runoff protection (berming etc) will be required. Topsoil stockpiles will be hand seeded with a mixture of crested wheat grass and yellow sweet clover to provide additional protection. Stockpile slopes will be kept to a maximum 1 to 2 slope. See attached map #5.

Rule M-10 (12)

Roads directly pertaining to the mining operation will be scarified, disced to prepare a seedbed and seeded by broadcast to imprint methods. Should soil tests indicate the necessity, a recommended fertilizer will be applied

to accelerate regrowth. Berms will be constructed to prevent road use by rabbit hunters during reestablishment of vegetative cover.

The areas to be re-vegetated initially are in such close proximity to the active operation that fencing would really serve no useful purpose. As mining progresses, the existing public safety fence will be upgraded to prevent the occasional sheep herd in the area from damaging new vegetation. The only time livestock are even in the mine area is for a very brief period in the early spring.

Redistribution

The recommended soil tests are in process, as soon as results are received a copy will be forwarded to Oil, Gas & Mining.

Based on present experience, available topsoil will provide approximately .41ft. of redistributed topsoil for reclamation. This figure is based on measurement of areas presently stripped. Approximately 360,000 ft² and 150,000 ft³ of worthwhile topsoil to redistribute. $150,000 \text{ ft}^3 \div 360,000 \text{ ft}^2 = .416 \text{ ft.}$

Rule M-3 (2)(C) M-10 (6)


Reject material consists of mostly oversize and off color limestone. Samples were taken by Oil, Gas & Mining person for analysis to determine if any negative effects on revegetation. The quantity is indeterminate due to the vagaries of blast performance etc.

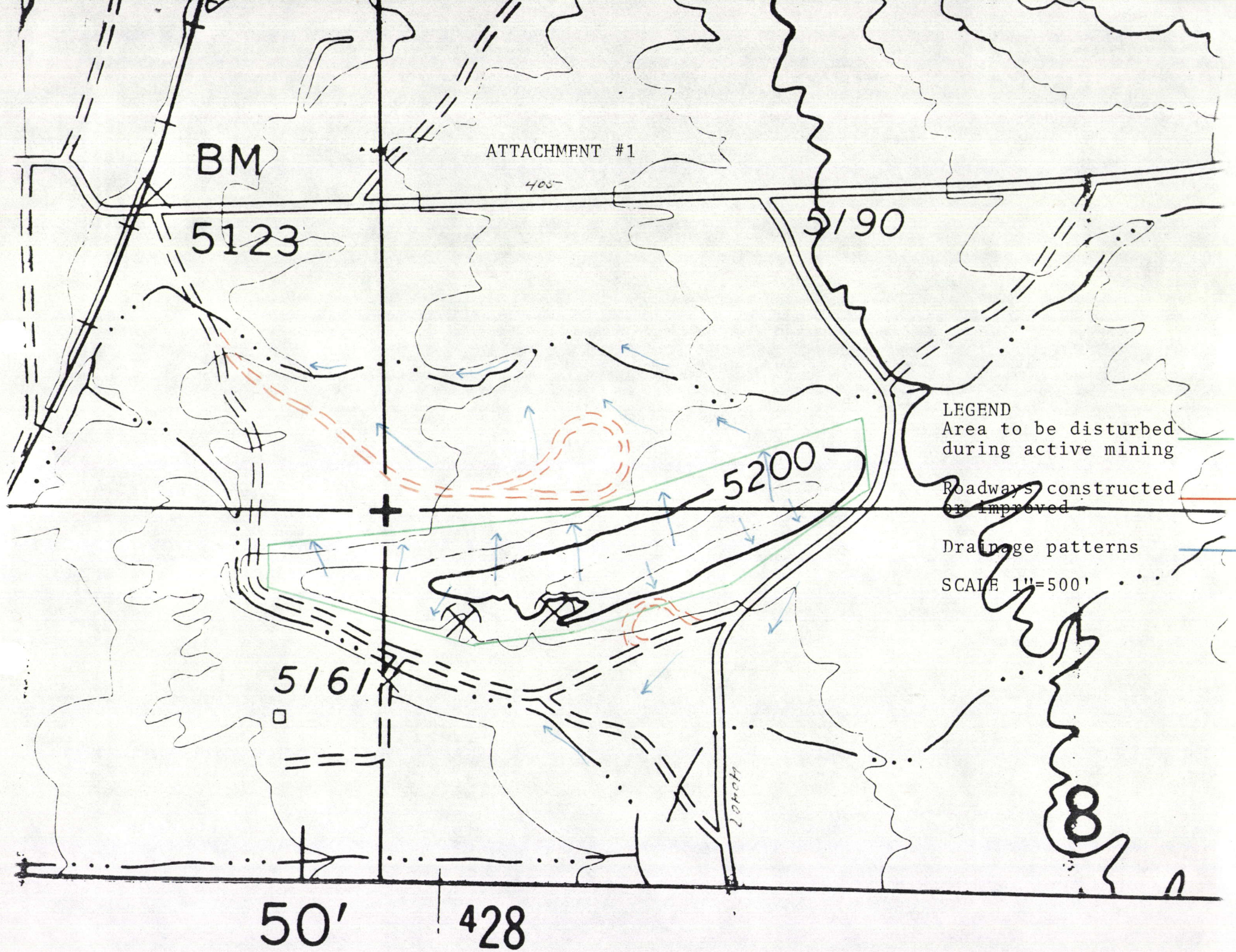
Rule M-10 (2)(B)

Trash will be hauled to a local sanitary landfill. No written approval was received for the fencing. See attachment #7, photos of berms and fencing.

I certainly appreciate your cooperation in this matter and also appreciate the assistance given us by Mr. Tom Portle.

Sincerely,
Western Clay Company


Thomas E. Robison
Gen. Mgr.



ATTACHMENT #2

BM

5123

5190

5200

Lime Kiln

Quarries

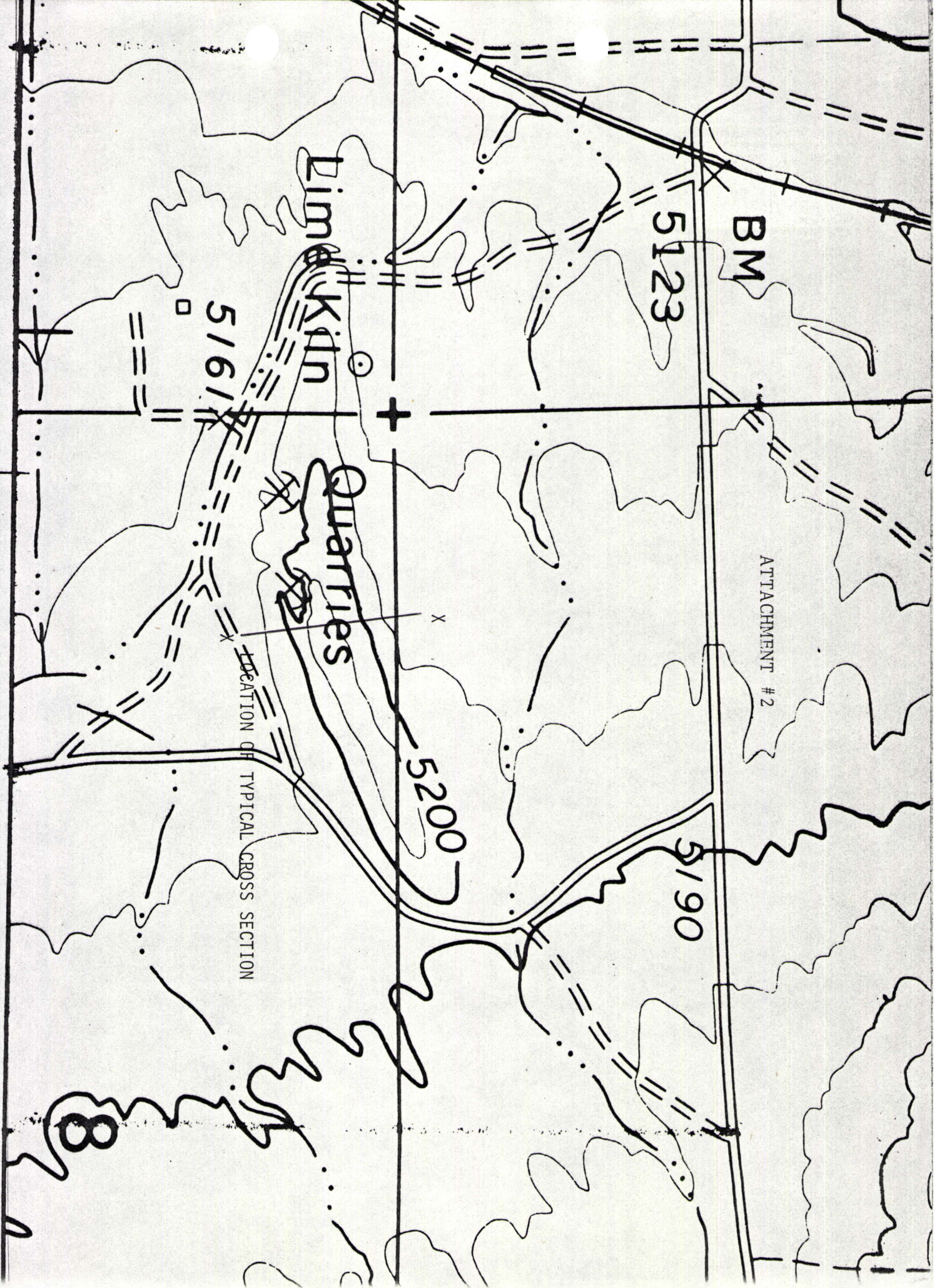
5161

LOCATION OF TYPICAL CROSS SECTION

50'

428

8



ATTACHMENT #3

REVEGETATION SPECIES	MIXTURE RATE PLS/AC*	# SEEDS/ SQ. FT/ACRE	COST/ACRE
1. Indian Ricegrass	#8	21.6	\$ 102.00
2. Sandberg Bluegrass	#2		10.00
3. Fourwing Saltbush	#2		7.70
4. Needle & Thread	#2	2.6	23.00
5. Big Sagebrush	#2		16.00
6. Shadscale	#4		51.00
TOTAL	20		209.70
1. Siberian Wheatgrass	#4	11.4	5.00
2. Russian Wildrye	#4	7.8	3.00
3. Western Wheatgrass (opt)	#4*	5.0	6.60
4. Indian Ricegrass	#4	10.8	51.00
5. Shadscale	#4		34.00
6. Fourwing Saltbush	#2		7.70
7. Big Sagebrush	#2		16.00
8. Sandberg Bluegrass	#2		10.00 est.
9. Mormon Tea	#1		10.00 est.
TOTAL	24		\$136.70

*not in total

UT-RANGE-2
Rev. 6/78

RANGE CONDITION RECORD

USDA
Soil Conservation Service

(9" Annual Precip.) Write-up No. _____

Site Name Semi Desert Shallow Loam Ranch WESTERN CLAYField Office RichfieldSection 5/7/8 T 21S R 1ERange Conservationist Walt BlackDate 1/10/83

(1) Plant Group	(2) Symbol or Common Plant Names	(3) % Present by wt.	(4) % Climax by wt.	(5) Proper use factor	CONDITION CLASS INDICATORS: (Check Those That Apply)																					
Grasses and Grass-like Plants	Indian Ricegrass	2			% Climax Vegetation 100-76 75-51 50-26 25-0	Current Erosion None Moderately Active Severely Active	Stand for site 3/4 to full 1/2 1/4 1/10 or less	Condition Rating Excellent Good Fair Poor																		
	Sandberg Bluegrass	1																								
	Needle & Thread	T																								
	Cheatgrass (all dead) (Note litter)	60																								
Forbs or Weeds	Saka	2			RANGE TREND INDICATORS: Litter and Mulch Adequate Inadequate Scarce Trend: Improving Declining Static Total annual yields Pounds per acre air dry <u>200</u> Potential total annual yield #/Ac <u>600</u>																					
Trees and Shrubs	Shadscale	14			DENSITY AND SOIL DATA <table border="1"> <thead> <tr> <th>(6)</th> <th>% Present</th> </tr> </thead> <tbody> <tr><td>Bare Ground</td><td>10</td></tr> <tr><td>Surf. Frag.</td><td>40</td></tr> <tr><td>Litter</td><td>40</td></tr> <tr><td>Annuals</td><td></td></tr> <tr><td>P. Forbs</td><td></td></tr> <tr><td>P. Grass</td><td>2</td></tr> <tr><td>Shrubs</td><td>8</td></tr> <tr><td>Shrubs .25M</td><td>10</td></tr> <tr><td>Trees M</td><td></td></tr> </tbody> </table>	(6)	% Present	Bare Ground	10	Surf. Frag.	40	Litter	40	Annuals		P. Forbs		P. Grass	2	Shrubs	8	Shrubs .25M	10	Trees M		Soil Series _____ Soil Type _____ Soil Phase _____ Soil Profile No. _____ Kind of Livestock Use <u>Sheep</u> Kind of Game Use _____ Rabbits, Lizards _____ Season of Use <u>Spring, Fall</u>
	(6)	% Present																								
	Bare Ground	10																								
	Surf. Frag.	40																								
	Litter	40																								
	Annuals																									
	P. Forbs																									
	P. Grass	2																								
	Shrubs	8																								
	Shrubs .25M	10																								
Trees M																										
Snakeweed	20																									
Rabbitbrush	T																									
Horsebrush	1																									
Black Sage	1																									
Cactus	T																									
Greasewood	T																									
100%		100%			UNIVERSAL SOIL LOSS EQUATION T _____ R _____ K _____ L _____ S _____ (LS) _____ C _____ RxKx(LS)xC = A = _____ Tons/AC/ Year Recommended Practices: % Cover by species Snakeweed 4 Shadscale 3 Indian Rice Needle & Thread 2 Sandberg 1																					

Remarks

- Writeup No. - Number UT-Range-2's as follows: first letter of last name of technician, last two numbers of year, and from 1 to as many as are needed each year in each field office area. Example: A-76-49, or an alternate method is to number from 1 to as many as are needed on each ranch or project.
- Site Name - Show range site name.
- Ranch - Show cooperator's name or name of ranch.
- Field Office - Show field office or soil conservation district.
- Location - Show quarter section or forty, section, township, and range.
If this is not known, location can be by pasture no., or name or creeks, drainages, mountain peaks, etc. Aerial photo number may also be used with coordinates.
- Range Conservationist - Name of technician(s) assisting rancher. List all present.
- Date - Date range condition determination is made.
- Column 1 - Show % of total annual yield for each group of plants. The total of the three groups should be 100%.
- Column 2 - List common name for each plant which makes up 1% or more of the total composition by weight or show plant symbol. Use symbol from List of Scientific and Common Plant Names for Utah.
- Column 3 - Show % of the total annual weight that each plant comprises.
- Column 4 - List % of species that was in the potential or climax using the range condition guide for this range site. Add column and place figure opposite totals.
- Column 5 - Proper Use Factor - Show % of the total annual weight that each species should be used to achieve proper grazing use. Consider the kind of livestock and big game using the area and the season of use when deciding the percent proper use.
- Condition Class Indicator - Circle proper block in each column.
-X Climax Column - Circle block where total of Column 4 occurs.
-Current Erosion - Circle block which shows status of erosion.
-Stand for Site - Circle block which gives population status of plants as 3/4 full, 1/2, 1/4, 1/10 or less of what the site will produce in its potential or climax.
-Condition Rating - Circle block which gives final range condition rating based on all three of the other columns.
- Litter and Mulch - Circle either adequate, inadequate or scarce.
- Trend - Circle "Improving" when key species have good vigor and are reproducing and soils are suitable, invaders are on the decline. Circle "Declining" when better forage plants are poor in vigor and dying out, invaders are taking over, decreasers and better increasers are not reproducing, erosion is active, and plant density is inadequate. Circle static if it appears range condition is neither improving nor declining.
- Total annual yields _____ pounds per acre air dry. List estimated present yield.
- Potential total annual yield _____ #/Ac. Potential annual yield from site description.
- Column 6 - List present percentage (%) of bare ground, surface fragments, litter, annuals, perennial forbs, perennial grass, and shrubs within 1 inch or in contact with soil surface. These should total 100%. Also show in addition to the above the percentage canopy cover of shrubs and trees. Show whether the shrubs are .5 meter high (20 inches) or 2 meters (6.5 feet) high. Show whether trees are 2 meters (6.5 feet) high or 4 meters (13 feet) high.
- Soil Series - List soil series name. If not correlated as yet write (tentative) after name.
- Soil Type - List soil type using letter codes as shown on codes to be used on SCS-Range-417. Example: GRV-FSL for very gravelly fine sandy loam.
- Soil Phase - If needed to designate the site insert appropriate names such as saline-alkali.
- Kind of Livestock Use - Use code letters C=cattle, G=goats, H=horses, S=sheep, O=others.
- Kind of Game Use - Use A=antelope, B=bison, D=deer, E=elk, O=others.
- Season of Use - -(dash) unknown, 1=spring, 2=summer, 3=fall, 4=winter, 5=specialized system.

Universal Soil Loss Equation

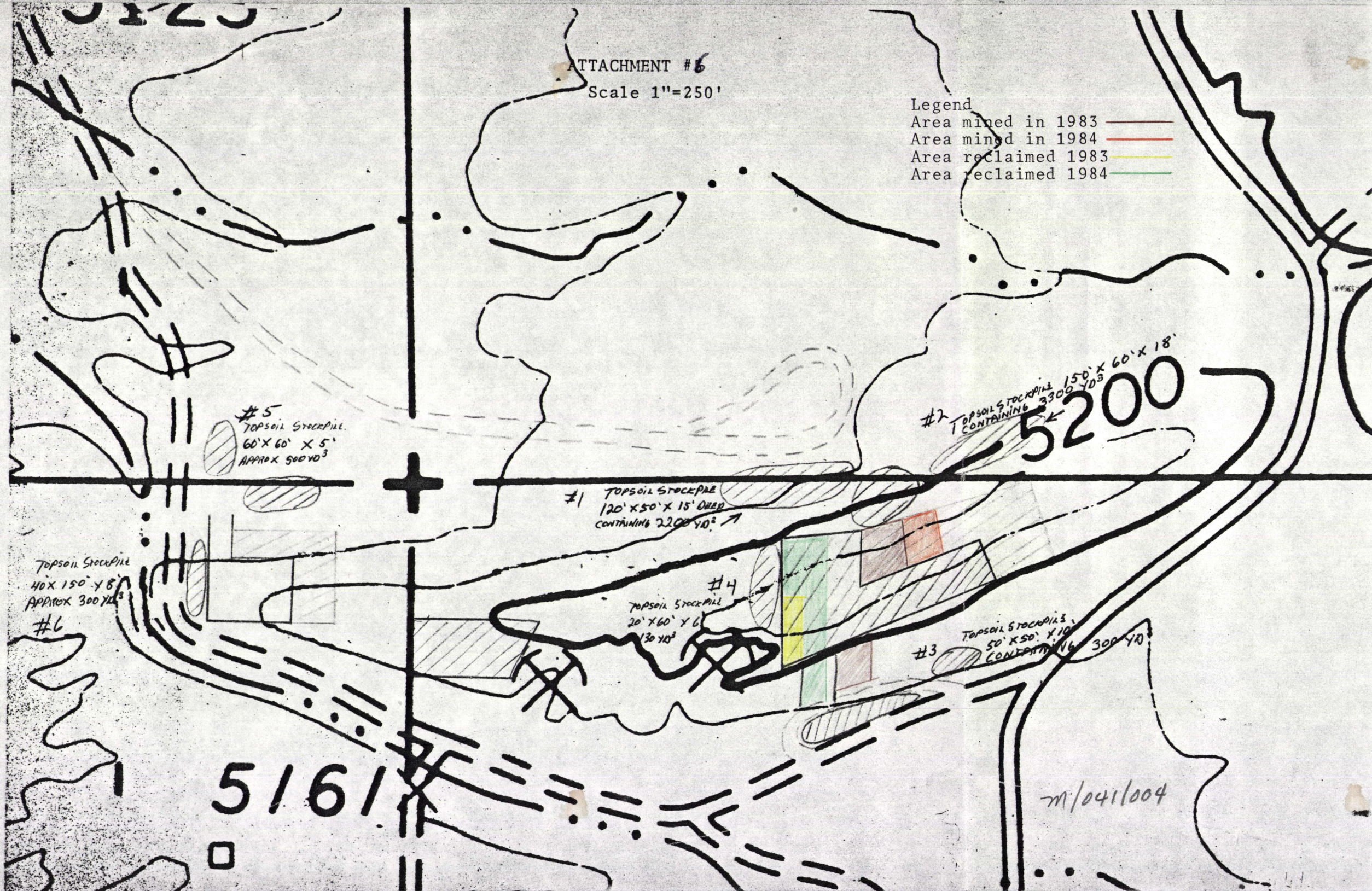
- T - Show soil loss tolerance for the soil from July 1977 "Soil Erodibility and Soil Loss Factors for Utah Soils" or from Form SCS-Soils 5.
- R - Show the proper rainfall factor for the location, page 22 "Universal Soil Loss Equation" brown book, Jan. 1976.
- K - Insert soil erodibility factor for the soil from the soil loss factor pamphlet listed above.
- L - Length of slope in feet measured from use in the USLE or taken from the chart "Slope Length as Percent Slope", Feb. 3, 1976.
- S - Show % slope measured at the place where the writeup is made.
- (LS) - List the factor shown on page 7 (Table 1) of the USLE brown book, Jan. 1976.
- C - List the "c" value by use of Table 5, page 19, of the USLE brown book, Jan. 1976. Factors from column 6 can be used to determine percent ground cover and canopy cover at 0.5 meters, 2 meters, and 4 meters.
- A - List soil loss in tons per acre per year after computation of the USLE formula.
- A = $R \times K \times (LS) \times C$.
- Recommend Practices: List range practices which will aid in range improvement and/or reduction in soil losses if needed.

ATTACHMENT #6

Scale 1"=250'

Legend

- Area mined in 1983 ———
- Area mined in 1984 ———
- Area reclaimed 1983 ———
- Area reclaimed 1984 ———



ATTACHMENT #5

Scale 1"=250'

Legend
Overburden stockpiles
Topsoil Stockpiles
Roads & Stripped areas
Mining areas

